QUESTIONS---- set1

1. **WAP to enter three numbers and print the middle number.**
2. **WAP to enter a number and print sum of its all digits. (Let x=625, result= 13)**
3. **WAP to enter the year value and check for leap year.**
4. **WAP to enter 3 numbers and print average of these numbers.**
5. **WAP to enter principal rate, time and print compound interest.**
6. **WAP to enter 2 numbers and print all even numbers between them.**
7. **WAP to enter a number and print sum of all the digits.**

   Input: enter number= 263

   Output: 2+6+3= 11
8. **WAP to enter a number and check for prime number.**
9. **WAP to enter a number and print all prime numbers smaller than that number.**
10. **WAP to enter the value of x and calculate value of y (y=x^5-1/5x^2+3 under root x).**
11. **WAP to enter 2 numbers and print the average of all numbers between them.**
12. **WAP to enter 2 numbers and print all palindrome numbers between them.**
13. **WAP to enter the number of steps and print fibonacci series up to that number.**
14. **WAP to enter a number and print its factorial.**
15. **Write a program to calculate area and circumference of circle.**
16. **Write a program to calculate simple and compound interest.**

    Input-:

    a. principal

    b. rate

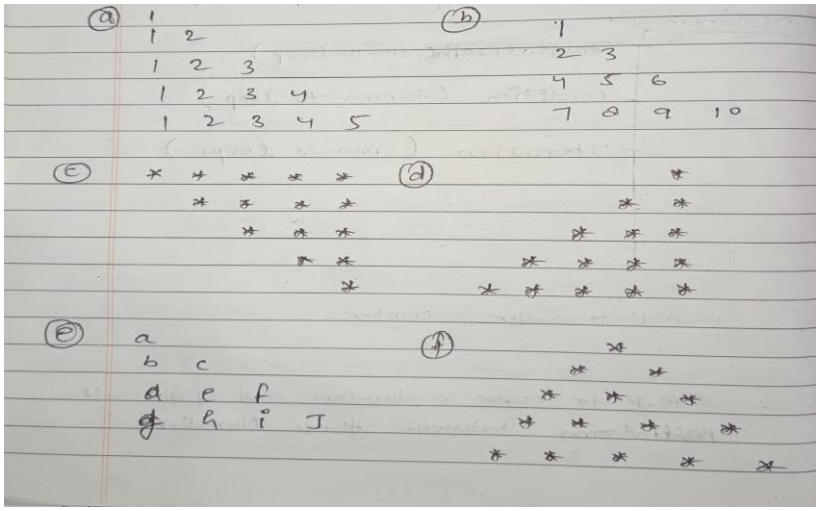
    c. time

    output-:

    d. compound interest

    e. simple interest
17. **WAP to calculate total surface area and Volume for a cylinder.**
18. **WAP to create an employee class with employee id, name, salary and age attribute & print the details using work note.**

19. **WAP to store 10 integers in array and print them and count the number of even and odd elements.**
20. **WAP to store 10 integers in array and print the average of odd elements.**
21. **WAP to store 5 integers in array, print all these numbers one by one with their factorial value.**
22. **WAP to print the structures:**



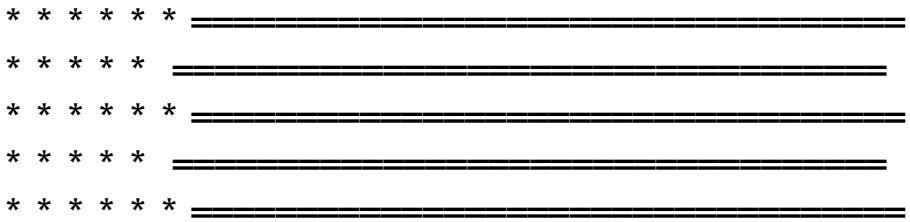
QUESTIONS---- set2

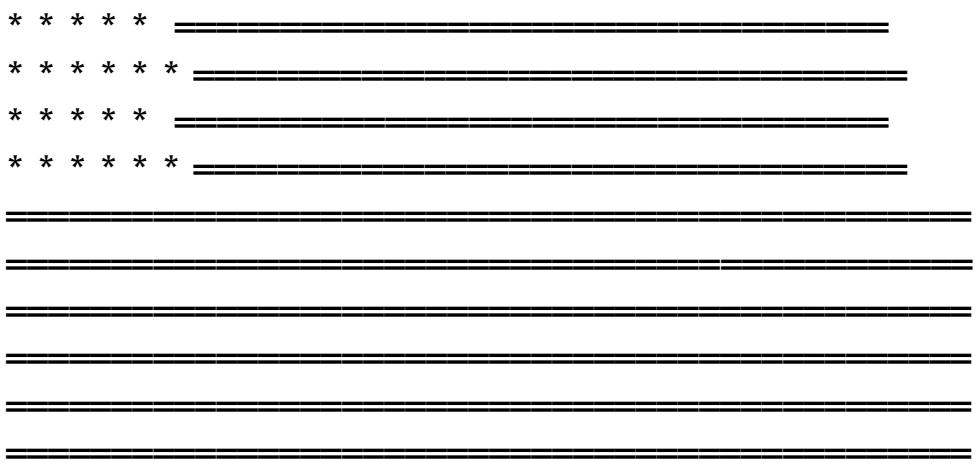
Basic JAVA----

1. **Write a Java program to divide two numbers and print them on the screen.**
   Test Data :
   50/3
   ***Expected Output* :**
   16
2. **Write a Java program to print the results of the following operations.**
   Test Data:
   a. -5 + 8 * 6
   b. (55+9) % 9
   c. 20 + -3*5 / 8
   d. 5 + 15 / 3 * 2 - 8 % 3
   ***Expected Output* :**
   43

1
19
13

3. **Write a Java program that takes two numbers as input and displays the product of two numbers.**
   Test Data:
   Input first number: 25
   Input second number: 5
   ***Expected Output* :**
   25 x 5 = 125
4. **Write a Java program that takes a number as input and prints its multiplication table up to 10.**
   Test Data:
   Input a number: 8
   ***Expected Output* :**
   8 x 1 = 8
   8 x 2 = 16
   8 x 3 = 24
   ...
   8 x 10 = 80
5. **Write a Java program to print the area and perimeter of a circle.**
   Test Data:
   Radius = 7.5
   Expected Output
   Perimeter is = 47.12388980384689
   Area is = 176.71458676442586
6. **Write a Java program that takes three numbers as input to calculate and print the average of the numbers.**
7. **Write a Java program to print an American flag on the screen.**
   Expected Output





8. **Write a Java program to convert an integer number to a binary number.**
   Input Data:
   Input a Decimal Number : 5
   Expected Output
   Binary number is: 101
9. **Write a Java program to convert a binary number to a decimal number.**
   Input Data:
   Input a binary number: 100
   Expected Output
   Decimal Number: 4
10. **Write a Java program and compute the sum of an integer's digits.**
    Input Data:
    Input an integer: 25
    Expected Output
    The sum of the digits is: 7
11. **Write a Java program to count letters, spaces, numbers and other characters in an input string.**
    Expected Output
    The string is : Aa kiu, I swd skieo 236587. GH kiu: sieo?? 25.33
    letter: 23
    space: 9
    number: 10
    other: 6

12. **Write a Java program to print the ASCII value of a given character.**
    Expected Output
    The ASCII value of Z is :90
13. **Write a Java program to input and display your password.**
    Expected Output
    Input your Password:
    Your password was: abc@123
14. **Write a Java program to print numbers between 1 and 100 divisible by 3, 5 and both.**
    Sample Output:
    Divided by 3:
    3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57
    , 60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 90, 93, 96, 99,

    Divided by 5:
    5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90,
    95,

    Divided by 3 & 5:
    15, 30, 45, 60, 75, 90,
15. **Write a Java program to reverse a string.**
    Input Data:
    Input a string: The quick brown fox
    Expected Output
    Reverse string: xof nworb kciuq ehT

Conditional Statements And Loops---

1. Write a Java program that takes a number from the user and generates an integer between 1 and 7. It displays the weekday name.

Test Data
Input number: 3

Expected Output **:**
Wednesday

2. Write a Java program to find the number of days in a month.

Test Data
Input a month number: 2
Input a year: 2016
Expected Output **:**
February 2016 has 29 days

3. Write a Java program that requires the user to enter a single character from the alphabet. Print Vowel or Consonant, depending on user input. If the user input is not a letter (between a and z or A and Z), or is a string of length > 1, print an error message.

Test Data
Input an alphabet: p
Expected Output **:**
Input letter is Consonant

4. Write a Java program that takes a year from the user and prints whether it is a leap year or not.

Test Data
Input the year: 2016
Expected Output **:**
2016 is a leap year

5. Write a program in Java to input 5 numbers from the keyboard and find their sum and average.

Test Data
Input the 5 numbers : 1 2 3 4 5
Expected Output **:**

Input the 5 numbers :
1
2

3
4
5
The sum of 5 no is : 15
The Average is : 3.0

6. Write a Java program to display the cube of the given number up to an integer.

Test Data
Input number of terms : 4
***Expected Output* :**

Number is : 1 and cube of 1 is : 1
Number is : 2 and cube of 2 is : 8
Number is : 3 and cube of 3 is : 27
Number is : 4 and cube of 4 is : 64
7. Write a Java program that displays the sum of n odd natural numbers.

Test Data
Input number of terms is: 5
***Expected Output* :**

The odd numbers are :
1
3
5
7
9
The Sum of odd Natural Number upto 5 terms is: 25
8. Write a Java program to display the pattern like a right angle triangle with a number.

Test Data
Input number of rows : 10
***Expected Output* :**

1
12

123
1234
12345
123456
1234567
12345678
123456789
12345678910

9. Write a program in Java to make such a pattern like a right angle triangle with a number which repeats a number in a row.

The pattern is as follows :

1
22
333
4444

10. Write a Java program to make such a pattern like a pyramid with a number that repeats in the same row.

1
2 2
3 3 3
4 4 4 4

11. Write a Java program to generate the following * triangles.

Test Data
Input the number: 6
***Expected Output* :**

******
*****
****
***
**
*

12. Write a Java program to generate the following @'s triangle.

Test Data
Input the number: 6
***Expected Output* :**

@
@@
@@@
@@@@
@@@@@
@@@@@@

13. Write a program that accepts three numbers from the user and prints "increasing" if the numbers are in increasing order, "decreasing" if the numbers are in decreasing order, and "Neither increasing or decreasing order" otherwise.

Test Data
Input first number: 1524
Input second number: 2345
Input third number: 3321
***Expected Output* :**

Increasing order

14. Write a Java program that accepts two floatingpoint numbers and checks whether they are the same up to two decimal places.

Test Data
Input first floatingpoint number: 1235
Input second floatingpoint number: 2534
***Expected Output* :**

These numbers are different.

15. Write a Java program to display Pascal's triangle.

Test Data
Input number of rows: 5
***Expected Output* :**

Input number of rows: 5
1
1 1

1 2 1
1 3 3 1
1 4 6 4 1

Array---

1. **Write a Java program to find duplicate values in an array of integer values.**
2. **Write a Java program to find common elements between two arrays (string values).**
3. **Write a Java program to remove duplicate elements from an array.**
4. **Write a Java program to find the second largest element in an array.**
5. **Write a Java program to find all pairs of elements in an array whose sum is equal to a specified number.**
6. **Write a Java program to find the number of even and odd integers in a given array of integers.**
7. **Write a Java program to compute the average value of an array of integers except the largest and smallest values.**
8. **Write a Java program to remove duplicate elements from a given array and return the updated array length.**
   Sample array: [20, 20, 30, 40, 50, 50, 50]
   After removing the duplicate elements the program should return 4 as the new length of the array.
9. **Write a Java program to create an array of its anti-diagonals from a given square matrix.**
   Example:
   Input :
   1 2
   3 4
   Output:
   [
   [1],
   [2, 3],

[4]
]

10. **Write a Java program to check if a sub-array is formed by consecutive integers from a given array of integers.**
    Example:
    Input :
    nums = { 2, 5, 0, 2, 1, 4, 3, 6, 1, 0 }
    Output:
    The largest sub-array is [1, 7]
    Elements of the sub-array: 5 0 2 1 4 3 6
11. **Given two sorted arrays A and B of size p and q, write a Java program to merge elements of A with B by maintaining the sorted order i.e. fill A with first p smallest elements and fill B with remaining elements.**
    Example:
    Input :
    int[ ] A = { 1, 5, 6, 7, 8, 10 }
    int[ ] B = { 2, 4, 9 }
    Output:
    Sorted Arrays:
    A: [1, 2, 4, 5, 6, 7]
    B: [8, 9, 10]
12. **Write a Java program to find the maximum product of two integers in a given array of integers.**
    Example:
    Input :
    nums = { 2, 3, 5, 7, -7, 5, 8, -5 }
    Output:
    Pair is (7, 8), Maximum Product: 56
13. **Write a Java program to rearrange a given array of unique elements such that every second element of the array is greater than its left and right elements.**
    Example:
    Input :
    nums= { 1, 2, 4, 9, 5, 3, 8, 7, 10, 12, 14 }
    Output:
    Array with every second element is greater than its left

and right elements:
[1, 4, 2, 9, 3, 8, 5, 10, 7, 14, 12]

14. Write a Java program to find the maximum difference between two elements in a given array of integers such that the smaller element appears before the larger element.
    Example:
    Input :
    nums = { 2, 3, 1, 7, 9, 5, 11, 3, 5 }
    Output:
    The maximum difference between two elements of the said array elements
    10
15. Write a Java program to find the minimum subarray sum of specified size in a given array of integers.
    Example:
    Input :
    nums = { 1, 2, 3, 4, 5, 6, 7, 8, 9,10}
    Output:
    Sub-array size: 4
    Sub-array from 0 to 3 and sum is: 10

String----

1. Write a Java program to print all permutations of a given string with repetition.

Sample Output:

```
The given string is: PQR
The permuted strings are:
PPP
PPQ
PPR
...
RRP
RRQ
RRR
```

2. Write a Java program to find the length of the longest substring of a given string without repeating characters.

Sample Output:

```
Input String : pickoutthelongestsubstring
The longest substring : [u, b, s, t, r, i, n, g]
The longest Substring Length : 8
```

3. Write a Java program to print a list of items containing all characters of a given word.

Sample Output:

```
The given strings are: rabbit   bribe   dog
The given word is: bib

The strings containing all the letters of the given word are:
rabbit
bribe
```

4. Write a Java program to reverse words in a given string.

Sample Output:

```
The given string is: Reverse words in a given string
The new string after reversed the words: string given a in
words Reverse
```

5. Write a Java program to remove "b" and "ac" from a given string.

Sample Output:

```
The given string is: abrambabasc
After removing the new string is: aramaasc
```

6. Write a Java program to count and print all duplicates in the input string.

Sample Output:

```
The given string is: w3resource
The duplicate characters and counts are:
e  appears  2  times
r  appears  2  times
```

7. Write a Java program to check if two given strings are rotations of each other.

Sample Output:

```
The given strings are: ABACD  and  CDABA

The concatination of 1st string twice is: ABACDABACD
The 2nd string CDABA  exists in the new string.

Strings are rotations of each other
```

8. Write a Java program to read two strings append them together and return the result. If the strings are different lengths, remove characters from the beginning of the longer string and make them equal lengths.

Sample Output:

```
The given strings is: Welcome and home
The new string is: comehome
```

9. Write a Java program to check whether a specified character is happy or not. A character is happy when the same character appears to its left or right in a string.

Sample Output:

```
The given string is: azzlea
Is z happy in the string: true

The given string is: azmzlea
```

```
Is z happy in the string: falses
```

10. Write a Java program to test if a string contains only digits. Returns true or false.

Sample Output:

```
First string:
131231231231231231231231231212312312
true

Second string:
1312312312 3Z123123123123123121231 2312
false
```